

**University of Tokyo**  
**Department of Economics**

**Incomplete Market Models in Macroeconomics: Basics and Applications**

**Syllabus**

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**Course schedule**

The lectures will be held on December 2 and 9, 13:00-14:45. On Zoom.

**Office hours**

Please make an appointment by email.

**Description**

These two lectures will cover various topics surrounding the incomplete-market models in macroeconomics. First, I will review the aggregation properties of complete-market models. After briefly covering the mathematical background on the existence and uniqueness of the stationary distribution, I will talk about two basic models (the Huggett model and the Aiyagari model) with an emphasis on intuitions. In the second lecture, I will talk about quantitative applications. I will review some computational methods and talk about applications on the labor market dynamics.

**Course Outline**

1. Basics (first lecture)
  - (a) Aggregation (Mukoyama (2010))
  - (b) Existence and uniqueness of the stationary distribution (Stokey et al. (1989) Chapter 11)
  - (c) Asset pricing (Huggett (1993), Krusell et al. (2010))
  - (d) Production (Aiyagari (1994))
2. Applications (second lecture)
  - (a) Transition dynamics (<https://toshimukoyama.github.io/MyWebsite/Aiyagari.pdf>)
  - (b) Welfare evaluations (Mukoyama (2013))
  - (c) Business cycles (Boppart et al. (2018))
  - (d) Labor market dynamics (Krusell et al. (2020))

## References

- Aiyagari, S. R. (1994). Uninsured Idiosyncratic Risk and Aggregate Saving. *Quarterly Journal of Economics* 109, 659–684.
- Boppart, T., P. Krusell, and K. Mitman (2018). Exploiting MIT Shocks in Heterogeneous-Agent Economies: the Impulse Response as a Numerical Derivative. *Journal of Economic Dynamics and Control* 89, 68–92.
- Huggett, M. (1993). The Risk-Free Rate in Heterogeneous-Agent Incomplete-Insurance Economies . *Journal of Economic Dynamics and Control* 17, 953–969.
- Krusell, P., T. Mukoyama, and A. Şahin (2010). Labour-Market Matching with Precautionary Savings and Aggregate Fluctuations. *Review of Economic Studies* 77, 1477–1507.
- Krusell, P., T. Mukoyama, R. Rogerson, and A. Şahin (2020). Gross Worker Flows and Fluctuations in the Aggregate Labor Market. *Review of Economic Dynamics* 37, S205–S226.
- Mukoyama, T. (2010). Welfare Effects of Unanticipated Policy Changes with Complete Asset Markets. *Economics Letters* 109, 134–138.
- Mukoyama, T. (2013). Understanding the Welfare Effects of Unemployment Insurance Policy in General Equilibrium. *Journa of Macroeconomics* 38, 347–368.
- Stokey, N. L., R. E. Lucas, Jr., and E. C. Prescott (1989). *Recursive Methods in Economic Dynamics*. Cambridge: Harvard University Press.